PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of	Docket No: Q66727
Masahiko YAMADA	
Appln. No.: 09/978,275	Group Art Unit: 2623
Confirmation No.: 4449	Examiner: Anthony M. MACKOWEY
Filed: October 17, 2001	

For: APPARATUS FOR SUPPRESSING NOISE BY ADAPTING FILTER CHARACTERISTICS TO INPUT IMAGE SIGNAL BASED ON CHARACTERISTICS OF INPUT IMAGE SIGNAL

REPLY BRIEF UNDER 37 C.F.R. § 41.41

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Sir:

In response to the Examiner's Answer dated November 29, 2006, Appellant submits this Reply Brief in support of patentability of the claims.

The Examiner's Answer responds to the Appeal Brief dated September 6, 2006.

The Examiner's Answer maintains the basis of rejection previously set forth in the Final Office Action dated October 6, 2005 but elaborates on the ground of rejection in response to the Appeal Brief arguments. Appellant maintains that the claims are patentable for the reasons set forth in the Appeal Brief and submits the following rebuttals in reply to the Examiner's statements beginning at page 16 of the Examiner's Answer.

As an initial matter, the Examiner emphasizes that in the present interpretation of the claims, "first information indicating an exposure dose with which said radiographic image has been produced" can correspond to the image value signal. Therefore, the original image 2 (Fig. 4a of Vuylsteke" can correspond to the first information. The above clause is part of a longer recitation, which describes "a characteristic calculation unit which obtains at least one first characteristic of said input image by calculation using a function based on first information indicating an exposure dose...." The Examiner further contends that the resultant images 31 correspond to the function. See page 17, first full paragraph, Examiner's Answer.

The Examiner then refers to Fig. 5 to note that the resultant image 31 is applied for calculation of a local variance v. The Examiner concludes that the variance is applied to the detail image 31, which in turn is obtained from the image value signal 2. See page 18, first full paragraph, Examiner's Answer. Thus, the Examiner appears to assert two alternative bases for interpreting the phrase "a characteristic calculation unit which obtains at least one first characteristic of said input image signal by calculation using a function based on first information indicating an exposure dose with which said radiographic image has been produced." In particular, both the detail image 31 is read as the first characteristic, or the local variance v is read as the first characteristic.

Even assuming that broadly read, the input image 2 can correspond to the claimed "first information indicating an exposure dose", the Examiner's rebuttal would lead to an alternative basis for withdrawal of the rejection. The Examiner had previously indicated that the variance corresponded to the smoothing, where at least one second characteristic is adapted to the input

image signal based on the first characteristic. See Examiner's Answer, page 4, first three lines, referring to the text describing Fig. 5. Therefore, the Examiner now refers to Fig. 5 as supporting both the "characteristic calculation unit which obtains at least one first characteristic of said input image by calculation using a function based on first information indicating an exposure dose" and also the "smoothing unit adapts at least one second characteristic of the smoothing filter to said input image signal based on said at least one first characteristic." The double counting undermines the Examiner's rejection.

As a related matter, to the extent that the Examiner maintains that the variance determination refers to operation of the second characteristic, this also does not support the rejection. The noise suppression function as defined by col. 9, in relation to Fig. 5 describes that variance v_n determined by a maximum locator 70 is used as a parameter in the noise suppression function S_{vn} as

$S_{vn}(v) = 0$ if $v <= K * v_n$

$S_{vn}(v) = 0$ $1 - K * v_n/v$, otherwise.

Fig. 5 makes clear that the noise suppression (71) is not adapted to an input image signal 2. At best, the noise suppression may be applied to a signal 31, which was previously designated as the "first characteristic". If the Examiner relies on the signal 31 to be the "first characteristic", the Examiner cannot further assert that the process is adapted to a separately recited "said input image signal" based on the first characteristic, by relying on the same signal 31. This would, again, result in improper double-counting. Rather, in Vuylsteke, the additional characteristic is applied to a calculated variance v.

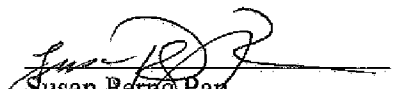
In summary, claim 1 describes inter-relationships between an input image signal, a first characteristic, and a second characteristic. The Examiner cannot consistently read the signals of Vuylsteke onto the claimed inter-relationships and still maintain the rejection. In particular, to the extent the input image 2 of Vuylsteke is read as the "input image signal", the second characteristic of the smoothing filter is not applied to input image 2.

For all the above reasons, Appellant maintains that claim 1 is patentable. Claims 7-11 and 20-21 are patentable based on analogous recitations.

With further regard to claims 9-11 and 20-21, the Examiner's reliance on the signal 31 to teach a "first characteristic" would obviate the ability to read the signal 31 onto plural band-limited signals. See Examiner's Answer at pages 6-7 relying on the detail image as the bandlimited signal, and also page 17, first full paragraph, last sentence, which relies on detail image as the "first characteristic". The Examiner's analysis includes double-counting of elements on this additional basis.

For the reasons set forth above and those reasons of record in this appeal, Appellant respectfully submits that the claims should be deemed allowable.

Respectfully submitted,



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